FIG. 1

A block diagram of a preferred system architecture of an electronic marketplace

200

202 — A buyer submits an RFQ for one or more products/services with multiple attribute preferences to a marketplace.

210 — The submitted RFQ is posted on the marketplace for a period time specified by the buyer.

215 — Sellers examine/evaluate the RFQ, among others, to decide if they want to submit bids to the RFQ.

220 — Sellers create/configure one or more bids to the RFQ, if they decide to bid.

225 — Sellers send bids to the marketplace.

230 — The marketplace receives the bids, records them in a database, and displays them to the buyer.

235 — The buyer examines/evaluates the submitted bids to decide one or more winning bids.

240 — If necessary, the buyer makes requests more information about bids to sellers, who respond to them.

245 — The buyer selects one or more winning bids.

250 — If necessary, the buyer negotiates further with one or more sellers who submitted winning bids.

255 — The buyer and sellers settles about the deal; payment and shipment is executed.

FIG. 2
A flow chart of a preferred RFQ process

RFQ N

Product specification
Attribute 1: value range
Attribute 2: value range
Attribute 3: value range

Service specification
Attribute 4: value range
Attribute 5: value range
Attribute 6: value range

Supplier qualification
Attribute 7: value range
Attribute 8: value range
Attribute 9: value range

505

515

310

320

330

300
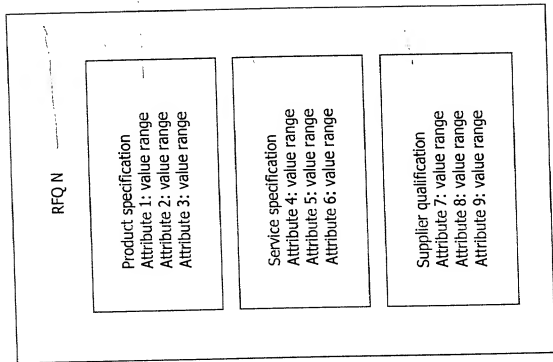
FIG. 3

An example of an RFQ having multiple attributes

700

405

410

415

Bid M

Product specification
Attribute 1: value
Attribute 2: value
Attribute 3: value

420

Service specification
Attribute 4: value
Attribute 5: value
Attribute 6: value

430

Supplier qualification
Attribute 7: value
Attribute 8: value
Attribute 9: value
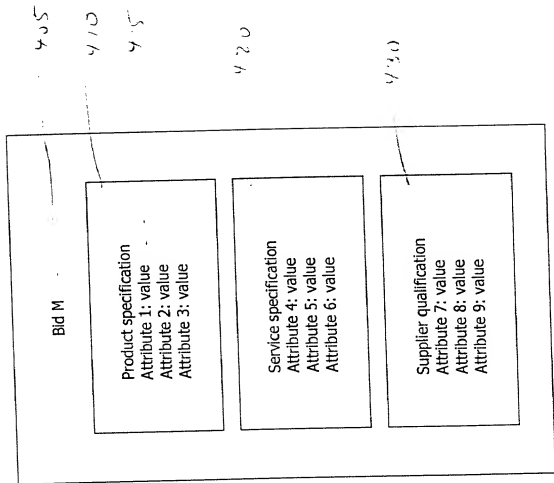
FIG. 4

An example of bids having multiple attributes

300

510

515

520

525

500

RFQs w/ attributes

Attribute weights

Multi-attribute decision analysis

Scoring function

Winning RFQs w/ scores

FIG. 5

A block diagram of a preferred RFQ selection process
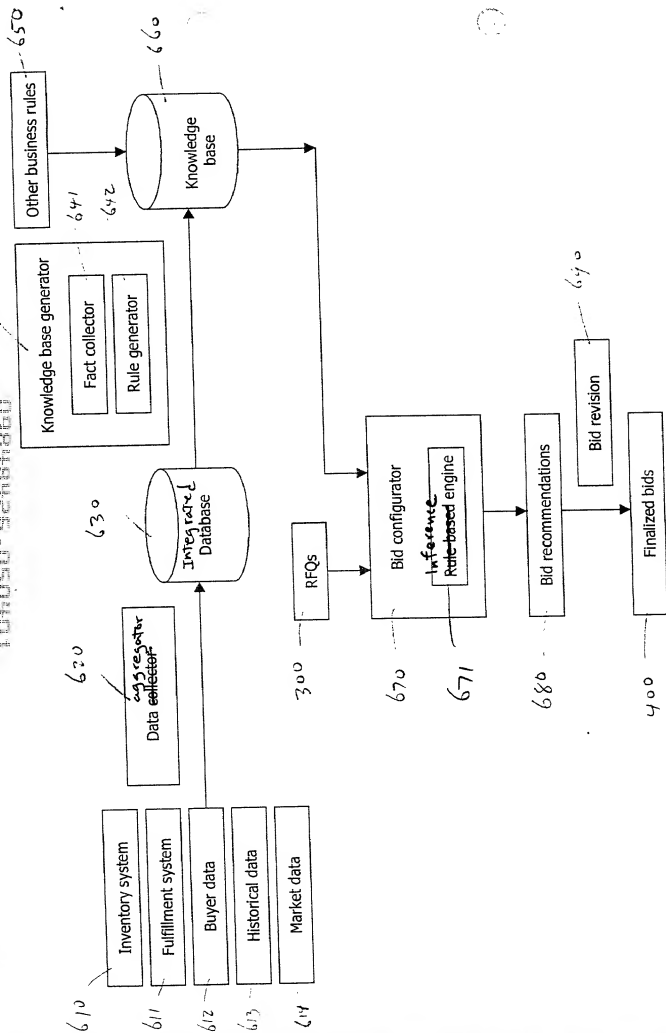
A block diagram of a preferred bid configuration system
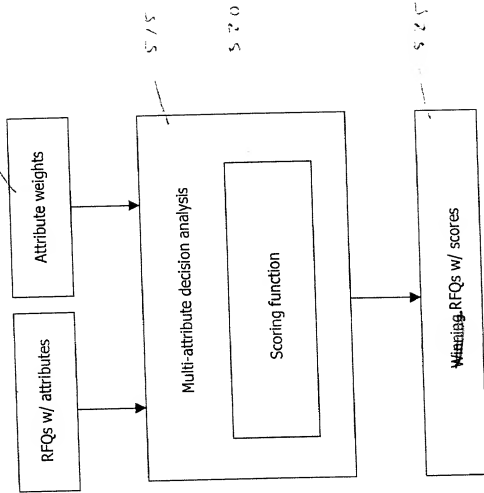
Labels in diagram:

- 650 — Other business rules
- 660 — Knowledge base
- 640 — Knowledge base generator
  - 641 — Fact collector
  - 642 — Rule generator
- 630 — Integrated Database
- 620 — Data collector / aggregator
- 600
- 610 — Inventory system
- 611 — Fulfillment system
- 612 — Buyer data
- 613 — Historical data
- 614 — Market data
- 300 — RFQs
- 670 — Bid configurator
  - 671 — Inference / Rule-based engine
- 680 — Bid recommendations
- 690 — Bid revision
- 400 — Finalized bids

FIG. 6

700

Rules for product specification — 710

711 If a product/service's gross margin > 50%, then give the highest priority to it among alternatives.

712 If a product/service's gross margin < 35%, then give the lowest priority to it among alternatives.

713 If a product's on-hand inventory > 4 weeks in supply, then give the highest priority to it among alternatives.

714 If a product's on-hand inventory < 2 weeks in supply, then give the lowest priority to it among alternatives.

715 If a buyer's reputation rate is better than 4, then apply 3% discount rate.

Rules for service specification — 720

721 If a buyer's reputation rate is better than 3, then add a year to the standard warranty period.

Rules for buyer qualification — 730

731 If a buyer's stock value has decreased more 50% in the last 1 year, then assign the lowest priority to its RFQ.

Selling policies — 740

741 Limit the min/max num of buyers.

742 No buyer receives more than 40% of the business.

FIG. 7

Examples of rules for bid configuration

800

Gross margin(Product X) = 45%	805
Gross margin(Product Y) = 15%	810
On-hand inventory(Product Z) = 3 weeks in supply	815
On-hand inventory(Product W) = 2 weeks in supply	820
Reputation rate(Buyer X) = 4	825
Reputation rate(Buyer Y) = 2	830
Stock value(Buyer W) = 57	835
Supplier relationship(Buyer Z) = 10 years	840
Stock market index(Market X) = 7251	845
Amount of deals in 2000(Buyer A) = $327,250	850
Bid submission due(RFQ X) = March 31, 2001	855
Softening point(RFQ Y) = (300, 350) degree in Kelvin	860

FIG. 8

Examples of facts for bid configuration